

Applicant(s): Joseph W. Triepels et al.  
Serial No.: 09/519,551  
For: DISPLAY DEVICE  
Filed: March 6, 2000  
Examiner: A. Abduselam  
Group Art Unit: 2674

PHN 17,326

### **REMARKS/ARGUMENTS**

Claims 1 through 10 are pending in the present application.

The Action (1) rejected claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,868,582 to Jacobi et al. (hereinafter “the Jacobi reference”) in view of U.S. Patent No. 5,802,699 to Fjelstad et al. (hereinafter “the Fjelstad reference”); and (2) rejected claims 9 and 10 under 35 U.S.C. 103(a) as being unpatentable over the Jacobi reference in view of the Fjelstad reference and in further view of U.S. Patent No. 6,563,554 to Okamoto et al. (hereinafter “the Okamoto reference”).

Regarding item (1) identified above, Applicants respectfully submit that claim 1 is patentable over the cited reference combination at least because such combination fails to disclose or suggest a laminar substrate with opposed sides each provided with electrically conducting patterns that are electrically through-connected via at least one opening in the laminar substrate. That is, the Jacobi reference not only fails to disclose or suggest the use of a laminar substrate with opposite sides having electrically conducting patterns, as suggested by the Action (OA, part 2, p.2), but further fails to disclose or suggest that such conducting patterns be through connected via at least one opening in the laminar substrate, which opening is proximate pixels. Additionally, the Fjelstad reference, which reference was cited to purportedly overcome the acknowledged shortcoming associated with the Jacobi reference, likewise fails to disclose or suggest the invention of claim 1.

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The Action suggests that substrate 21, as disclosed by the Fjelstad reference, reads on the laminar substrate defined by claim 1 of the present application. Applicants respectfully disagree with this contention at least in that substrate 21, as taught/suggested by Fjelstad et al., does not have opposed sides provided with conductive patterns electrically through connected via at least one opening therein that is proximate pixels. Rather, the Fjelstad reference discloses/suggests: *(i)* that “[s]ubstrate 21 ... is a multi-layer laminated circuit panel with numerous electrical leads 28...[extending] in mutually orthogonal, horizontal directions parallel to the top and bottom surfaces” (col. 9, lns. 58-63); *(ii)* that substrate 21 further include “vertical or z-direction leads 56 interconnecting the various horizontal connectors 28.” (col. 9, lns. 65-67); *(iii)* that “[s]ome of the z-direction leads are exposed at the top surface 23” (col. 9, ln. 67 to col. 10, ln. 1); *(iv)* that “[e]ach exposed lead 56 is connected to internal circuitry within the substrate 21, such as x- and y-direction leads 28” (col. 11, lns. 45-46); and *(v)* that “the bottom surface [of substrate 21 include] ...further exposed leads (not shown).” (col. 12, lns. 2-4).

From at least the foregoing, Applicants respectfully submit that Fjelstad et al. suggest/disclose a substrate 21 that has exposed vertical leads on either side thereof and which are connected to various horizontal leads within the substrate 21. Thus, the exposed vertical leads (i.e., arguably electrically conducting patterns) on opposed sides of the substrate 21, at best (though not specifically disclosed or suggested by Fjelstad et al.), perhaps are indirectly connected via the various horizontal leads within the substrate 21. Applicants respectfully submit that this lead-to-lead-to-lead connection arrangement differs clearly from “electrically conducting patterns that are electrically through-

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connected via at least one opening in the laminar substrate, wherein said at least one opening is proximate said pixels”.

Further, although the Fjelstad reference discloses/suggests sheet-like connectors 24/26 having holes 36 extending therethrough, such holes 36, contrary to that which seems to be suggested by the Action (OA, part 2, p.3), do not electrically connect electrically conducting patterns on opposed sides of the connectors 24/26. Rather, according to Fjelstad et al., holes 36, in cooperation with distinct contacts 45, operate to facilitate engagement with a microelectronic component (i.e., a microelectronic element is positioned so that bump leads 70 thereof register with contacts 45 and holes 36 of the connector (col. 12, lns. 27-27 and 60-62)).

Still further, the Action also generally asserts that locating at least one through connection opening proximate to pixels would have been obvious to one skilled in the art (OA, part 2, p.3) without indicated where such teaching and/or suggestion appears in the cited references. Applicants respectfully submit that it is not enough to merely imply that the prior art either implicitly or explicitly teaches or suggests a claimed element, it must be indicated where such teaching or suggestion appears in the cited art. (See, e.g., *In re Albert M.A. Rijckaert et al.* (28 USPQ 2d 1955) (Fed. Circuit 1993)).

Thus, based at least on the foregoing, Applicants respectfully submit that present claim 1 is patentable over the art of record. Accordingly, reconsideration and withdrawal of the stated rejection of claim 1, as well as claims 2-8, which claims depend either directly or indirectly from claim 1, are

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respectfully requested.

Regarding item (2) identified above, Applicants respectfully submit that claims 9 and 10, which depend directly from claim 1, are patentable over the cited art (i.e., the Jacobi/Fjelstad combination in further view of the Okamoto reference) at least for the reason identified/discussed above with respect to claim 1. That is, the Okamoto reference, which was cited in the Action for purportedly disclosing a "liquid crystal layer (1) sandwiched by the two substrates such that the one of the optical design of the liquid crystal layer (1) includes the one that can attain electro-optical characteristics. See col. 3, 19-25", (OA, part 3, p. 4), fails to overcome the notable shortcomings discussed with respect to the Jacobi/Fjelstad combination. Accordingly, reconsideration and withdrawal of the rejection of claims 9 and 10 are respectfully requested.

In sum, it is respectfully submitted that the present claims are patentable over each of the cited references and/or any proper combination thereof. Hence, this application is in condition for allowance. Accordingly, reconsideration and withdrawal of all objections, and all rejections of the claims, are respectfully requested.



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